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REMARKS

Claims 10-29 are pending in the present application. Applicant also adds new claim 30 which is fully supported by the specification as originally filed. Please see page 14, line 20 to page 15, line 5.

Applicant respectfully responds to this Office Action.

Claim Rejections – 35 USC § 103(a)

Examiner rejected claims 10-29 under 35 U.S.C. § 103(a) as being unpatentable over van Nee (U.S. Patent No. 6, 175, 550) in view of Jung (U.S. Patent No. 6, 307, 851). Further, claims 23-29 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over van Nee in view of Jung, and further in view of Applicant's Admitted Prior Art.

Applicant's claims 10-29 are patentable over van Nee and Jung. To maintain a *prima facie* case of obviousness, there must be a suggestion or motivation to combine, a reasonable expectation of success, and the prior art references must teach or suggest all claim limitations (please see MPEP § 2142). Further, the prior art must be considered in its entirety, including disclosures that teach away from the claims (please see MPEP § 2142.02). Van Nee and Jung do not teach or suggest all features of Applicant's claims. Further, there is no teaching or suggestion to combine. In fact, Jung explicitly teaches away from such a combination. Therefore, there is no *prima facie* case of obviousness and Applicant's claims are allowable over van Nee and Jung.

Applicant's claim 10, and all of Applicant's claims, include the feature "wherein the forward link frequency bins and the at least one reverse link frequency bins comprise signals obtained by code spreading in the time domain." Jung does not disclose this feature. Applicant has explained this in previous responses and the prior arguments are restated and reemphasized after the current arguments. Please consult them for further details.

Jung teaches MC-CDMA in which codes are applied in the frequency domain. In addition to the previous arguments, Applicant's would like to point to Jung's statement in column 2, lines 42-47: "Since a data symbol dn(k) is assigned to a single subcarrier in OFDM, OFDM has a low frequency diversity capacity. On the other hand, in MC-CDMA, a data symbol dn(k) is transmitted over Q subcarriers simultaneously... ." That is, a particular data symbol is

spread over Q subcarriers simultaneously. Further evidence of the frequency domain spreading in Jung is that the spreading is done prior to an inverse discrete Fourier transformation (IDFT). Please see Jung, column 4, lines 30-65. Applicant's claims spreading in the time domain.

Jung also teaches away from the combination used in Examiner's rejection: "Since a data symbol dn(k) is assigned to a **single subcarrier in OFDM**, OFDM has a low frequency diversity capacity. On the other hand, in **MC-CDMA**, a data symbol dn(k) is transmitted over **Q** subcarriers simultaneously... ." Therefore, in addition to the differences already states, Jung teaches away from combining the OFDM system in van Nee with the MC-CDMA system in Jung. It would be impossible to simultaneously keep a symbol in one frequency bin and spread it over multiple frequency bins.

Therefore, all of Applicant's claims are patentable over van Nee and Jung.

Previous Arguments:

Applicant restates previously filed arguments that van Nee in combination with Jung does not teach all elements of Applicant's claims - specifically, frequency bins comprising signals code spread in the time domain

Applicant's claim 10, and all of Applicant's claims, include the feature "wherein the forward link frequency bins and the at least one reverse link frequency bins comprise signals obtained by code spreading in the time domain." In van Nee, the "control circuitry can dynamically scale the number of carriers below the upper limit on the number of carriers to decrease the signal bandwidth" (please see van Nee col. 1, line 65 to col. 2, line 2). **Van Nee does not teach code spreading as in Applicant's claims in the time domain but rather OFDM, in which signal generation is performed in the frequency domain.** Therefore, Applicants' claim 10, and all of Applicant's claims are distinct and patentable over van Nee.

Jung teaches MC-CDMA in which codes are applied in the frequency domain. Please see Jung col. 4, line 35 through col. 5, line where "subscriber-specific signature code sequences" are applied prior to an inverse discrete Fourier transform. Jung performs these computations in time only in the sense that all computations, including "frequency domain" operations, are performed as a function of time by processors, computational elements, or the human brain. The terms "time domain" and "frequency domain", however, have an ordinary use to those with ordinary

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skill in the art. Frequency domain operations are performed on a signal after the signal has gone through a time-to-frequency transform (e.g. a Fourier transform, discrete cosine transform, etc.) or prior to the signal going through a frequency-to-time transform (e.g. an inverse Fourier transform, an inverse discrete cosine transform, etc.). Please see *Digital Signal Processing: Principles, Algorithms and Applications (3rd Edition)* by John G. Proakis and Dimitris Manolakis or any signal processing text. Hence, **Jung may perform the computations as a function of time (as all computations are performed) but the computations are performed in "frequency domain" and not in the "time domain" as in Applicants' claims.**

Therefore, van Nee in combination with Jung does not teach all elements of Applicant's claims - specifically, frequency bins comprising signals code spread in the time domain. Applicant's specification as originally filed discusses the advantages of frequency allocation of frequency bins comprising signals code spread in the time domain including flexible spectrum management and integration with existing hardware as well as the selection of various frequency bins. Please see pages, for example, 12-17.

In order to expedite prosecution, Applicant amends all independent claims, claims 10, 17, and 20, to include the feature, "and further wherein each of the forward link bins and the at least one reverse link frequency bin are allocated for single-carrier CDMA communication within the respective bin." This amendment is fully supported by Applicant's specification as originally filed. Please see, for example, pages 12-17. The use of bins allocated for single-carrier CDMA communication within the respective bin further distinguishes from the cited art which does not have the advantages of frequency allocation of frequency bins comprising signals code spread in the time domain including flexible spectrum management and integration with existing hardware as well as the flexibility in selection of various frequency bins.

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REQUEST FOR ALLOWANCE

In view of the foregoing, Applicants submit that all pending claims in the application are patentable. Accordingly, reconsideration and allowance of this application are earnestly solicited. Should any issues remain unresolved, the Examiner is encouraged to telephone the undersigned at the number provided below.

Respectfully submitted,

Dated: June 28, 2006

By: _____

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